



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/698,336

10/31/2003

Douglas J. Mooney

112-0128US

9686

29855

7590

12/30/2005

WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI,
P.C.
20333 SH 249
SUITE 600
HOUSTON, TX 77070

EXAMINER

REHM, ADAM C

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s) <i>Cite</i>	
	10/698,336	MOONEY, DOUGLAS J.	
	Examiner	Art Unit	
	Adam C. Rehm	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

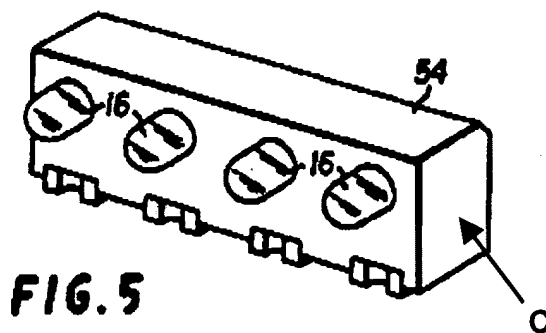
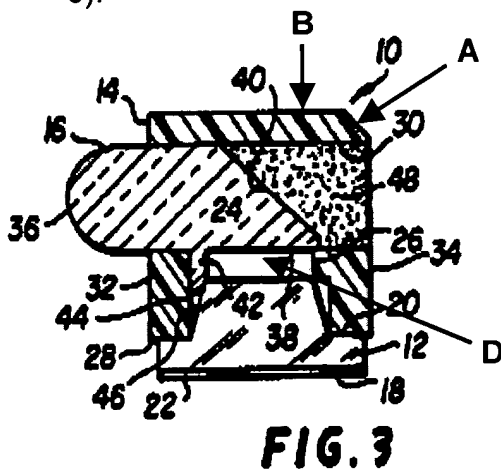
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 5-6, 15-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by DRAGOON (US RE34,254).
2. Regarding Claims 1-3, 5-6, 16-18 and 20, DRAGOON provides:
 - A segmented top wherein each segment is generally planar (Fig. 3 below, Ref. A and B) and connected to the adjacent segment and corresponding to a segment of a parabola (Fig. 5 illustrates an embodiment wherein a plurality of segmented tops are connected adjacent to each other);
 - A back wall having an upper edge connected to a top portion connected to the segmented top (Fig. 3 below illustrates 34 connected to A), a generally planar bottom portion/edge (Fig. 1, 28) and opposing side portions/edges (Fig. 5 below, Ref. C and side portion opposite C);
 - A pair of opposing side walls connecting the segmented top to the back wall (Fig. 5 below, Ref. C and side wall opposite C);
 - A plurality of interior walls defining chambers (Figs. 4 and 5 illustrate a plurality of housings connected via adjacent/interior walls forming a plurality of chambers) open on their bottom surface (Figs 1-3 illustrate mounting of the

housing 10 wherein the LED is inserted into the housing via an open bottom) and open on their front surface (30/36, Figs. 1 and 3); said interior walls connected on their top portion to the segmented top (Figs. 1, 4 and 5) and connected on their rear portion to the back wall (Figs. 1, 4 and 5) and having their bottom portions generally coplanar with the bottom of the back wall (Figs. 1, 4 and 5);

- Wherein the interior walls are reflective and opaque (Column 4, Lines 11-14 and Claims 1 and 2);
- Wherein at least one segment of the segmented top is in a plane which is substantially parallel to the plane defined by the bottom portions of the interior walls (Fig. 3 below, B is parallel to 28);
- Wherein at least one segment of the segmented top is in a plane, which is at an acute angle to the plane defined by the bottom portions of the interior walls (Fig. 3 below, A and 28) and reflects light in a direction that is substantially parallel to the surface of the printed circuit board (referred herein as "52", Fig. 3).



3. Regarding Claim 15, DRAGOON provides:

- A plurality of LEDs in a linear array (12), mounted on the PCB (referred herein as "52", Column 4, Lines 31-34) parallel to and proximate a PCB edge (52, Fig. 4; Column 1, Lines 49-54);
- A light reflector mounted on the PCB (10) comprising a segmented top wherein each segment is generally planar (Fig. 3 below, Ref. A and B) and connected to the adjacent segment and corresponding to a segment of a parabola (Fig. 5 illustrates an embodiment wherein a plurality of segmented tops are connected adjacent to each other);
- A back wall having an upper edge connected to a top portion connected to the segmented top (Fig. 3 below illustrates 34 connected to A), a generally planar bottom portion/edge (Fig. 1, 28) and opposing side portions/edges (Fig. 5 below, Ref. C and side portion opposite C);
- A pair of opposing side walls connecting the segmented top to the back wall (Fig. 5 below, Ref. C and side wall opposite C);
- A plurality of interior walls defining chambers (Figs. 4 and 5 illustrate a plurality of housings connected via adjacent/interior walls forming a plurality of chambers) open on their bottom surface (Figs 1-3 illustrate mounting of the housing 10 wherein the LED is inserted into the housing via an open bottom) and open on their front surface (30/36, Figs. 1 and 3); said interior walls connected on their top portion to the segmented top (Figs. 1, 4 and 5) and

Art Unit: 2875

connected on their rear portion to the back wall (Figs. 1, 4 and 5) and having their bottom portions generally coplanar with the bottom of the back wall (Figs. 1, 4 and 5); and

- The light reflector being mounted on the PCB over the LEDs (10, 12, Figs. 1, 4 and 5) with an interior wall to separate adjacent light (Figs. 4 and 5 illustrate a plurality of housings connected via adjacent/interior walls forming a plurality of chambers), said reflector reflecting light parallel to the PCB (Fig. 3 above, A and 28; Column 2, Lines 29-32).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 10-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over DRAGOON (US RE34,254) in view of RUSSAY ET AL. (US 5,008,658).

9. Regarding Claims 4 and 19, DRAGOON substantially discloses the claimed invention as recited in Claims 1 and 18 above including interior walls that are reflective to light (Column 4, Lines 11-14 and Claims 1 and 2), but does not disclose interior walls that are diffusely reflective to visible light.

10. However, RUSSAY teaches interior walls, which are diffusely reflective to visible light for the purpose of scattering light (46, Fig. 3, Column 4, Lines 67 and 68, Column

5, Lines 1-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the DRAGOON device to include the type of diffusely reflective surface as taught by RUSSAY in order to provide a device that efficiently directs light in a desired direction (Column 5, Lines 6-11).

11. Regarding Claims 10-13, DRAGOON substantially discloses the claimed invention as recited above in Claim 1 including means for mounting a housing 14 to a PCB (52, Column 3, Lines 35-40), but does not disclose: a mounting stud on the support surface for attaching a light reflector to a printed circuit board; or a mounting stud having barbs for engaging a receiving hole in a printed circuit board; or a mounting stud that is threaded for receiving a nut or a mounting stud that is generally cylindrical and comprised of a material which may be deformed at its distal end to provide a region of increased diameter.

12. However, RUSSAY teaches a mounting stud (38) on a support surface (66) for attaching the light reflector (46, Fig. 3) to a printed circuit board (30); wherein the mounting stud (38) comprises barbs (Fig. 1 illustrates a non-uniform cylindrical body with ridges/barbs) for engaging a receiving hole (36) in a printed circuit board (30); wherein the mounting stud (38) is threaded for receiving a similarly threaded nut (Fig. 1); wherein the mounting stud is generally cylindrical and comprised of a material which may be deformed at its distal end to provide a region of increased diameter (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the DRAGOON device to include the type of releasable attachment

means as taught by RUSSAY, which would provide means to attach various objects to a printed circuit board (Col. 3, Lines 14-17).

13. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over DRAGOON (US RE34,254). DRAGOON substantially discloses the claimed invention as recited above in Claims 1 and 16, but does not explicitly disclose fabrication via an injected-molded, black thermoplastic resin or polycarbonate resin. However, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize a thermoplastic resin due to its ease of processing with such a resin being a polycarbonate resin due to its well-known electrical properties. An obvious molding process would be injection molding due its well-known ability to fabricate precision parts in three dimensions.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over DRAGOON (US RE34,254) in view of LEE (US 5,790,041). DRAGOON discloses the claimed invention as noted above, including a reflector (10) that is mounted to a PCB (52), but does not specifically disclose a chassis having an interior space and a front surface for user interface; an indicator panel having a front and back faces and mounted in the front surface of the chassis; and a plurality of windows in the indicator panel for transmitting light from the back face to the front face of the indicator panel. However, Applicant admits that it is typical to mount a PCB with an LED on a chassis (requiring an interior space) enabling a user to view the LED through windows/indicator panel (requiring front and back surfaces) (Paragraphs 2-3). It would have been obvious to

one of ordinary skill in the art at the time of invention to modify DRAGOON and use the chassis as taught by applicant in order to provide a secure housing for the PCB and its components and a optimum use/viewing of an internally-mounted indicator LED.

Response to Amendment

Drawings

15. The drawings were received on 10/11/2005. These drawings are accepted.

Response to Arguments

16. Applicant's arguments filed 10/11/2005 have been carefully considered but are only partially persuasive.

17. Applicant claims that DRAGOON does not disclose a light reflector having interior walls defining chambers open on their bottom and front surfaces said interior walls connected on their top portion to the segmented top and connected on their rear portion to the back wall and having their bottom portions generally coplanar on their rear portion to the back wall and having their bottom portions generally coplanar with the bottom of the back wall. As noted above, DRAGOON discloses a light reflector with internal reflective walls (Column 3, Lines 50-57; Column 4, Lines 11-14). Examiner interprets a wall to have both an exterior and an interior surface/wall. Furthermore, Figs. 4 and 5 illustrate a plurality of housings (10/54) adjoined to form a linear array having a plurality of interior walls that prevent light from bleeding over into adjoining indicators.

18. DRAGOON further discloses chambers defined by the interior walls (Ref. D) and open on their bottom and front surfaces (Fig. 3 above, illustrates an open bottom that

Art Unit: 2875

enables fitting of the LED (12) and an open front (30) that enables light to escape); said interior walls connected on their top portion to the segmented top (Figs. 3 and 4, Ref. C connects to 54/Ref. A/Ref. B) and connected on their rear portion to the back wall (Fig. 3, 34 connects to Ref. C) and having their bottom portions generally coplanar on their rear portion to the back wall and having their bottom portions generally coplanar with the bottom of the back wall (Fig. 3). DRAGOON discloses the invention as claimed and the rejections, therefore, are maintained.

19. Applicant argues that RUSSAY has no interior walls. Notably, the RUSSAY reference is used herein to illustrate the well-known use of a rough reflective interior surface. While the primary reference DRAGOON does not disclose a list of possible interior surface configurations, it is notoriously known in the art to design internal walls of a reflector with either a smooth surface to collimate light or a rough surface to scatter light. The rejections regarding use of a diffusely reflective wall and the obviousness thereof are maintained.

20. Applicant argues that the DRAGOON design, which incorporates lenses, obviates the use of interior walls. Contrary to Applicant's argument, DRAGOON does disclose interior walls, which are a necessary component for the reflector to effectively reflect light at an acute angle as well as to provide support for the lens. The rejection is maintained.

21. Applicant argues that RUSSAY does not teach incorporating the mounting studs on the light structure itself. Applicant further notes that there are limited means in which to attach a structure to a PCB and the RUSSAY reference is used herein to illustrate

attachment of a structure to a PCB via a mounting stud. Applicant claims that RUSSAY does not teach or suggest using a mounting stud on the domed light structure itself. However, the feature upon which applicant relies is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant claims "a mounting stud on the support surface for attaching the light reflector to a [PCB]" with the support surface defined as connected to/extending between interior walls and in a plane parallel to the interior wall bottoms. RUSSAY teaches a mounting stud (38) on a support surface (70/48) for attaching the reflector to a PCB (Fig. 1) wherein the support surface is located between interior walls (50a/50b) and parallel to the bottoms thereof (Fig. 1 illustrates 70/48 parallel to the bottom surface plane 66). The rejections regarding use of a stud to attach a structure to a PCB and the obviousness thereof are maintained.

22. Applicant argues that the virgin color of polycarbonate is black. This point is conceded and the claim is found to be allowable as indicated below.

Allowable Subject Matter

23. Claim 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: no art of record discloses or otherwise suggests a light reflector for PCB mounting comprising a top generally corresponding to a segment of a parabola and a

plurality of interior walls connecting to a top to a back wall and defining a chamber with the reflector fabricated from black, thermoplastic resin.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Correspondence

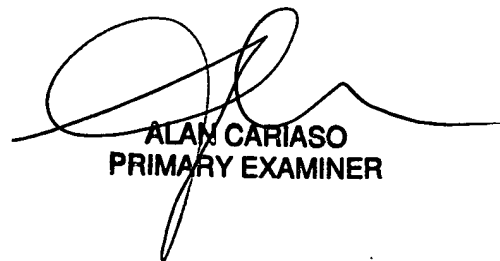
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2875

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACR
12/20/2005



ALAN CARIASO
PRIMARY EXAMINER